REMARKS

Claims 11-30 are all the claims pending in the application. The new claims 21-30 are added above. Claims 11 and 13-18 stand rejected on prior art grounds. Claims 12, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claim 12 has been rewritten in independent form, and therefore, claims 12, 19, and 20 should now be allowed. The specification is objected to, and claims 18 and 19 have been amended as suggested in the Office Action in order to overcome this objection. Applicants respectfully traverse the prior art rejection based on the following discussion.

I. The Prior Art Rejections

Claims 11, 13, and 15-18 stand rejected under 35 U.S.C. §102(e) as being unpatentable over Doubenspeck et al., hereinafter "Doubenspeck" (U.S. Pub. 2003/0116820). Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Doubenspeck in view of Komori et al. hereinafter "Komori" (U.S. Pub. 2002/0132446). Applicants respectfully traverse these rejections based on the following discussion.

A. The Rejection Based on Doubenspeck

Applicants respectfully traversed this rejection because Doubenspeck does not teach or suggest "removing said upper layer of said insulator layer" as defined by independent claim 11. This process is shown in Figure 5 which is discussed in detail in paragraph 29. More specifically, Figure 5 shows the fuse structure 100 undergoing an etching process, whereby the top layer 200 of the insulator layer 115 is removed. The height-reduced insulator layer 205 is simultaneously removed during this etching (for example, a wet etch). This removal of the top layer 200, and the height-reduced insulator layer 205 creates an open air gap 160 between the fuse element 140 and the middle layer 210 of the insulator layer 210. Furthermore, the etching allows the fuse portion 130 to protrude from the insulator layer 115, whereby the fuse element 140 is no longer flush with the insulator layer 115.

By using a damascene process, the claimed fuse can be made very thin compared to current fuses. Because there is less fuse material to blow, the forces associated with that action can be reduced. This also allows the fuse to be physically residing above the insulator and helps inhibit the transfer of energy from the fuse blow.

To the contrary, Doubenspeck discloses (as most clearly shown in Figures 1A-1G and Figure 2) a process where fuse material 114 is formed over an insulator layer 106c. Subsequently, corrosion stops 114b and 114d are formed by selectively reducing the height of portions of the fuse element 114 (Figure 1G). The center portion 114c of the fuse element (which is the portion of the fuse that will be blown) is not reduced in height (see paragraph 109). Doubenspeck does not remove any portion of the insulator 106c that is below the fuse element 114. This is contrary to the process defined by claim 11 because the "fuse area" of the "upper layer" of the "insulator layer" is below the "fuse element" in claim 11, and claim 11 defines the step of "removing said upper layer of said insulator layer." Therefore, claim 11 defines a process where a portion of the insulator layer that is below the fuse element is removed. As shown by Figures 1A-1G and Figure 2 of Doubenspeck, the insulator 106 that is below the fuse element 114 is not removed but instead remains with the structure. Thus, Doubenspeck does not teach or suggest a process of "filling said voids and said fuse with a fuse material to form fuse electrodes in said voids and a fuse element above said fuse area" of the upper layer of the insulator layer and then "removing said upper layer of said insulator layer" as defined by independent claim 11.

Thus, Applicants respectfully submit that Doubenspeck does not teach or suggest the process defined by independent claim 11 and that independent claim 11 is not anticipated by or obvious in view of Doubenspeck. Further, dependent claims 13, and 15-18 are similarly patentable, not only because they depend from a patentable independent claim, but also because of the additional features of the invention they define. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdrawn this rejection.

B. The Rejection Based on Doubenspeck in view of Komori

Komori is referenced for the limited purpose of disclosing an insulator layer that has a middle layer comprising silicon nitride in order to reject dependent claim 14. However, Komori does not teach or suggest (and is not referenced for teaching or suggesting) the claimed process of "filling said voids and said fuse with a fuse material to form fuse electrodes in said voids and a fuse element above said fuse area" of the upper layer of the insulator layer and then "removing said upper layer of said insulator layer" as defined by independent claim 11. Therefore, no combination of Doubenspeck and Komori would teach or suggest the invention defined by independent claim 11. Therefore, independent claim 11 is patentable over the proposed combination of Doubenspeck and Komori. Further, dependent claim 14 is similarly patentable, not only by virtue of its dependency from independent claim 11, but also by virtue of the additional features of the invention it defines. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdrawn this rejection.

II. Formal Matters and Conclusion

As mentioned above, the specification is objected to, and claims 18 and 19 have been amended as suggested in the Office Action in order to overcome this objection. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdrawn this objection.

In view of the foregoing, Applicants submit that claims 11-30, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0458.

Respectfully submitted,

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